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THE ECHO METHOD AND THE STUDY OF VALUES

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ABSTRACT

Values are subjective estimates of the worth or desirability of any entity or event, whether concrete or abstract. Explanation and prediction of human behavior can be improved by including value statements among the observed behaviors.

ECHO is a new method of studying values; it differs from most other methods by allowing the respondent great latitude of statement, by relating stated values to stated causes or social influences, and by eliciting multiple statements. Though its antecedents go back seventy-five years, only with the advent of computerized data analysis has the collection of such heterogeneous and complex behavioral data become generally useful. The information provided by ECHO complements the information provided by polls or surveys that use more specific and, usually, more numerous questions.

The concept value and related concepts are defined; the analysis of values and their place in behavioral research is treated. ECHO and five other methods of value study are described and then compared against the criteria of reliability, validity, and utility. Forty testable hypotheses are listed for future exploration of the concept value. Sixty-five references are listed.

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I. INTRODUCTION

Investigators who seek new insights in explaining and predicting human behavior have, since World War II, looked beyond what the study of attitude, opinion, belief, custom, norm, and related concepts can provide and have turned increasingly to a systematic study of values. ECHO is a new research tool for surveying values verbally expressed by persons in various groups, cultures, roles, and situations.

ECHO differs in three important ways from most methods currently used to study values: (1) a few very broad questions are asked that elicit responses structured almost entirely by the respondent, (2) questions are asked not only about what is valued and disvalued by the respondent but also about the associated sources of causation or social reinforcement, and (3) the same questions are repeated several times, requiring the respondent to generate multiple responses.

The presentation of a novel method obliges the investigators to relate their particular technique to a relevant background of literature and experience, so that informed readers may quickly grasp its broad implications for methodology and theory. The purpose of this paper is to place ECHO in an appropriate theoretical framework, supported where possible by selective reference to the literature. Since this is the first paper on the topic, some sections contain few citations; these sections, like most of the definitions, represent the considered judgment of the authors and are based on many different sources. The method itself has been described by Barthol and Bridge (1968) and will be briefly described at various points in this paper.

The use of broad, open-ended value questions can be traced back at least to Osborn (1894), who studied the moral values of children nine to eleven years old. Boys wrote as many answers as they liked to two questions: "What must a boy do to be called a good boy?" and "What must he do to be called a bad boy?" Girls answered a corresponding pair of

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questions. The responses described the good child as obedient, truthful, helpful to others, gentle, kind, unselfish, loyal, patient, quiet, and polite. The good boy was said not to fight, smoke, or play hookey; the good girl did not whisper in school, make noise on a rainy day, or drum on the piano. Osborn classified the responses into several kinds of behavior and found that more than half of the children contributed to a category involving obedience, while only about a quarter mentioned truthfulness. Intergroup comparisons were made between males and females and between classes in two different schools.

A technique that is the direct forerunner of the ECHO method was introduced by Bavelas (1942), who described its application to school children as follows:

> The first question was, 'What could a child of your age do at school that would be a good thing to do and someone would praise him?' When the child had answered the question, the experimenter asked, 'Who would praise him?' This unit was repeated three times, the second and third time the child being asked, 'What else could a child of your age do and someone would praise him?' On the fourth repetition the experimenter changed the statement by inserting the adjective 'very' before the word 'good,' and by changing the second half of the question to read, 'Who would praise him very much?' On the seventh repetition the experimenter read two 'very's' where one had been. In all, there were nine repetitions of the question asking for praisable activity. This unit of praise questions was followed by a unit of nine scold questions phrased in a corresponding manner. (1942, p. 373)

The Bavelas technique was superior to Osborn's procedure in three important ways:

1. Bavelas presented each question a standard number of times and elicited multiple responses from every subject.

2. The source of praise or blame, implicit in Osborn's questions, was made explicit by Bavelas.

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3.   Relationships between valued or disvalued acts and the
      sources of social reinforcement were analyzed.

Kalhorn (1944) applied the Bavelas technique in a study of Mennonite
and non-Mennonite school children, finding intergroup differences in
values and in sources of approval/disapproval. Havighurst and Neugarten
(1955) used the technique to compare midwestern white children with
children of ten American Indian communities.

The ECHO method differs from the Bavelas technique in the follow-
ing ways:
1.   Oral interviews are used only with respondents who cannot
      read and write.
2.   Not only are responses classified by the experimenters,
      but they are also usually classified by members of the
      pool from which the respondents were drawn.
3.   When appropriate, value statements drawn from certain
      populations are presented, along with comparison stimuli,
      to samples of the same and different populations to be
      judged for goodness, acceptability, etc., thus providing
      a measure of concurrent validity.
4.   The intra-question variables of valuation, role, situ-
      ation, event, source, and reinforcement have been con-
      ceptualized and manipulated.
5.   The analysis of data has been further developed and
      largely computerized.
6.   In addition to the usual summary tables, full display
      of the classified responses is readily available for
      reports.

In this paper, we discuss several aspects of the concept value
that are germane to our research interests. We differentiate value from,
and indicate some of its relationships to, concepts such as attitude,

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opinion, belief, and norm. We use the indispensable criteria of reli-
ability, validity, and utility, to compare ECHO with alternative ways
of studying values, pointing out some merits and demerits of various
methods. And finally, we discuss the power of ECHO to generate plausible
and testable hypotheses, listing in an appendix a number of hypotheses
that are worth testing.

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II.   THE CONCEPT "VALUE" IN BEHAVIORAL RESEARCH

Since ECHO is a method for studying values, its usefulness will depend on whether the concept value is a scientifically fruitful one. This section is a discussion of the concept in behavioral research.

A.   DEFINITIONS OF VALUE AND RELATED CONCEPTS

The concept value as used in this paper incorporates the ideas of goodness, attractiveness, interest, preference, satisfaction and their opposites. Stimuli or outcomes which man finds attractive and thus preferable to others have positive values; the reverse is true of negative values. As predictors of behavior, values are independent of concepts concerned with capacity, (e.g., intelligence, power, social skill). Individuals hold values, but values may also belong to groups, organizations, societies, and cultures, or they may be specific to roles and situations. Values result from shared human perceptions and shared meanings. They tend to be stable, but may change in strength and order over time and with changing circumstances.

Value is defined as the implicit or explicit estimate by a person, group, or organization of the merit, excellence, desirability, or worth of a behavior, principle, quality, event, or entity.

A value may be more or less bound to a particular person, role, situation, or object; it may vary along the independent dimensions of desirability and demand; its importance to the holder may be modified by the expectation (subjective probability) of the appearance of what is valued and other events (e.g., success or punishment) that may be associated with it. The investigator bases his determination of the value's specificity on the operations he uses to collect and analyze the data which generate the value statement. The value may be detected by observing behavior directly or by studying written or spoken reports of it.

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Values may be further defined by four conceptual variants:

1. Values are selection criteria, bases for judging the merit of objects, persons, ideas, events, or relations. They are bases for choosing or for developing agenda.

2. Value is also used to refer to behavior which has a required or "ought to do" quality. Such usage emphasizes the moral aspect of the concept, and it emphasizes values as behavior rather than as stimuli.

3. By contrast, some psychologists concerned with the experimental analysis of behavior use the term value to refer to those objective stimuli which are apparent goals of an organism (reinforcing stimuli). Thus, a person may be described in terms of those internal or external stimuli that serve to influence his behavior (rather than in terms of his needs, wants, or ambitions).

4. Social psychologists emphasize either the affective (feeling, sentiment) part of values, or the expectancy (set, attitudinal) part of values. In their study of the structure of meaning in various languages, Osgood, et al. (1957) consistently found that the first factor extracted from their matrices of correlations among word qualifiers was the evaluative factor. They see values as the primary component of meaning. Values seen as sentiments, or as the primary component of language-meaning structures, are not very different from attitudes except that they are more general.

The following terms--attitudes, norms, beliefs, habits, customs and folkways, mores, and opinions--are all related to values. They will be defined, but the definitions must be considered somewhat

arbitrary since they are used uniquely by some persons and interchange-
ably* by others.

Attitudes are defined as predispositions to respond to entities
or to situations in specific ways. The object of an attitude may be
abstract (democracy, love) or concrete (my dog). An attitude may be
inferred from behavior. Attitudes have both intellectual (cognitive)
and emotional (affective) components although the affect may be neutral.
The social legitimacy of a disposition or preference is irrelevant to
its classification as an attitude.

Norms are rules, standards, or patterns of behavior in specific
situational contexts shared by two or more persons. Norms tend to
reflect consensus and a common value system within a group. The term
value may refer to a specific behavior; that same behavior, when commonly
performed in a group, may also be called a norm. Behavioral norms can
be identified from observation or inferred from verbal reports. Just as
publicly held values are unreliable indicators of private behaviors, so
norms that are inferred from reports of private behavior are unreliable
indicators of publicly held values.

Beliefs are enduring, perceptual, and cognitive structures about
the nature of reality; they are statements concerning what is real and
credible in and about a person's world. Belief systems may be open or
closed, i.e., flexible and open to change on the basis of new evidence
or not; ideologies are coherent and tend to be closed and inflexible.

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* There can be some rationale for this. Values may be seen as attitudes
writ large, as more abstract and general attitudes, particularly when
values are seen only as preferences or criteria, with no oughtness or
legitimation implied. Beliefs are treated here as if analytically
distinguishable from values and attitudes because the distinction
appears feasible and useful. However, others may reasonably regard
beliefs as merely the intellectual (cognitive) components of attitudes.
And still others emphasize the cognitive aspect of values including
all values under the rubric of beliefs.

Krech and Crutchfield (1948) suggested that beliefs could differ in precision, specificity, strength, and saliency. The strength of beliefs need not depend upon verification or the possibility of verification, e.g., superstitions and beliefs about the existence of a supreme being. Beliefs and attitudes give continuity to a culture as well as to the personality of individuals. They give meaning to daily perceptions and activities and may arise because of the human need for meaning; they determine which solutions to problems are chosen.

Habits are learned actions, feelings or ways of perceiving. Habitual behaviors may be contrasted with other behaviors which are based on choice. To act, feel, and perceive a certain way from habit is to do so because such behavior has been reinforced in the past and has become semi-automatic, not requiring conscious choice or awareness of preference.

Customs and folkways are more than mere aggregates of individual habits; they are concrete social patterns of behavior, the outcome of shared but largely unreflective trial-and-error adjustments. They are always supported by social approval, and deviations from them may be punished.

Mores are customs "that are regarded by general agreement as highly important and obligatory, as evidenced by strong sentiments against deviation and by severe punishment for violation. Incest taboos and rules against in-group murder, rape, cannibalism, and other practices generally regarded as especially heinous," (Williams, 1968, p. 205) are examples of mores; so are the obligations of the scientific community to report results accurately and completely.

An opinion is a view, judgment, or appraisal formed about a particular matter; the term implies a conclusion that is open to contradiction. Opinions have neither the proven property of knowledge nor the unproven

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property of faith (a firm belief in something not proven). Opinions
may be about beliefs, attitudes, or values, although typically they
focus upon fairly specific beliefs or preferences. Opinions are often
so specific that the exact wording of questions may considerably influ-
ence the answers.

B.   EMPIRICAL RELATION OF THE CONCEPTS "GOOD" AND "BAD"

If good and bad were closely and inversely related, not much would
be accomplished by employing both concepts. It appears that good and
bad, though logical opposites, are not often opposites on linear dimen-
sions of response, but are either scarcely related or related in a non-
linear fashion. Whenever they are unrelated to one another but related
to the same criterion behavior, the very lack of relationship will be
advantageous, because goods and bads can contribute unique variance to
predictions of the criterion. Good values may be linearly related to
one another; bad values may similarly be related to one another; but
the set of good values and the set of bad values are likely to represent
orthogonal dimensions.

In a particularly ingenious and well-designed study an experimental
psychologist, Sidney Siegel (1964), found that the use of two value
dimensions greatly increased the accuracy of his predictions of behavior.
A psychologist and two experimentally-oriented philosophers raised the
question whether monetary losses and gains (a bad thing and a good thing)
that were objectively equal would also be subjectively equal. They found
that for most persons they were not: small losses usually were treated
as equivalent to larger gains.

Two other lines of evidence suggest that good and bad will not
usually be found in an inverse linear relation. One line of inquiry
derives from the work of the industrial psychologists, Herzberg, Mausner,
and Snyderman (1959), who asked their interview respondents to describe
times when they felt especially good and especially bad about their jobs;

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the results have been replicated in a study of male supervisors in a public utility (Schwartz, Jenusaitis, and Stark, 1963). Herzberg, et al., found that sources of job satisfaction were independent of and different from sources of dissatisfaction; the two attributes were not merely opposites. They also found that content factors (e.g., the kinds of problems encountered, self-actualization) tended to be related to satisfaction, whereas contextual factors (e.g., heat, cold, ugliness) tended to be related to dissatisfaction--but that part of the finding may be true only for professionals and managers. While specific findings of statistical independence between content and context may not hold up, the more basic finding that the sources of satisfaction are not the opposite of sources of dissatisfaction but are unrelated to one another appears to be a significant and useful discovery.

A second line of evidence emerges from a survey approach to the study of psychological well being by the National Opinion Research Center (NORC) of the University of Chicago. Bradburn and Caplowitz in their Reports on Happiness (1965) discuss the considerable lack of relation between reported sources of positive feeling (affect) and sources of negative feeling. In none of these studies does the mere lack of goods equal something bad or the mere lack of bads equal something good. A similar finding occurs in several unpublished ECHO studies, particularly the ones concerning what is good to have happen and what is bad to have happen. One implication of these findings is that in exploring what people regard as worth doing and worth having happen one should ask not only about good and better, but also about bad and worse.

C. ADDITIONAL ASPECTS OF THE CONCEPT "VALUE"

Studies of values focus on various aspects of the concept. Besides such relatively simple characteristics as strength or intensity, specificity-diffusion, salience, clarity, and centrality, values may be studied in combination with other variables such as time, situation, culture, and role. A study of value preferences or requirements for specific roles or situations may have considerable practical interest.

Some contributors to the empirical study of values, e.g., philosopher Charles Morris (1956), describe value sets (different styles or ways of life) in part, as sets of means; not as ends. By contrast, psychologist Ralph K. White (1951) would define operationally only those values which appear as ends in that they are themselves not further defended or rationalized. Philospher John Dewey restricted the use of the term value to those situations in which value-preferred actions (behaviors) led to outcomes of interest; in other words means and ends come in sets and both should be preferred for either to be valued. Political scientist Robert C. North (1963) sees the distinction as fairly unimportant since, in the fabric of historical reality, actions conceived as means are likely to be ends for some other means, and ends are legitimately considered means toward other ends.

Students of crises recognize that threats to values or valued entities increase the prominence or visibility of the threatened values, thus increasing their importance--at least temporarily. Values "temporarily" prominent on agendas during crises may, as a result of those actions or of commitments calling for action, become permanently prominent after the crises have passed.

Recently, Milton Rokeach (1968), making a strong case for the utility of the study of values, developed two rank-orderable scales of values (instrumental and consummatory) which emphasize their means-ends distinction. Respondents are given two separate lists of values to rank order in their own value system, within the constraints of a forced-rank distribution. Rokeach has in a sense "validated" his value scale by collecting data to show that values are superordinate or prepotent over less general, more specific attitudes, as he had predicted. He relates values to one another in terms of a rank order scale of preference of attributes of persons and behaviors.

Essentially, Rokeach applied some of Abelson's psycho-logic to the situation. Abelson (1959) argued that rules of psycho-logic would

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apply to situations where $\underline{S}s$* were conscious of difficulties. In an unpublished study, Milburn found that Rokeach means (instrumental values) differentiated between college men and women far more readily than did ends (terminal values), suggesting that terminal values are more general and less sex-role related than are instrumental values.

Rokeach instrumental values look like "good to do" items in the ECHO format, while the consummatory or terminal items look like "good to happen" ECHO items; the items are more abstract, however, and clear relationships with ECHO questions have not yet been demonstrated.

Rokeach does not consider negative values, nor does he include the analytic categories relating to perceived antecedent sources and consequent effects of valued behavior. In addition, Rokeach omits the distinction between duty (ought to do) and desire (like to do), an important topic in philosophical writing about value.

D.   VALUES IN DECISION MAKING AND PROBLEM SOLVING

Like other scientific concepts, values can be used to explain and relate diverse behaviors. They also play a central role in all decision making, but their effect is modified by information, beliefs, and the estimates of probabilities that certain events will occur, or the conditional probabilities that these events will occur only under certain conditions. A general outline of the decision-making process as affected by values looks something like this:

1.   A person observes events within his life space. He perceives these as worth his attention; they are above his threshold of awareness.

2.   He places on his agenda events constituting problems or obstacles to the enhancement of values.

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* The standard abbreviation $\underline{S}$ will be used to stand for "subject," any individual used in an experiment or survey.

3. He constructs or discovers alternative possible
   solutions.
4. He selects an alternative for implementation.
5. He implements the selected alternative.

Values play a central role whenever a person makes a rational
choice or selection, although they may be less important where behavior
is already determined by policy, custom, habit, neurosis, or reflex.
Values thus contribute significantly to each phase of the decision-making
process. A set of events or circumstances must first be in one's life
space, i.e., be perceived as existing. Values operate at this point
largely through the mechanisms of selective perception, a process usually
not involving conscious choice. However, once problems appear significant
enough to be assigned space on the problem agenda, the presence of obstacles
to the achievement of positive values adds to the prominence of these
problems, and the values they affect.

The strongest emphasis on the role of values has been in the pri-
mary choice itself, yet values are not the only determinant. Information,
beliefs, and estimates of probabilities are associated in the decision
maker's mind with each alternative, along with conditional probabilities
that other events will occur, given certain apparently developing sets
of events. For example, most scientific hypotheses are based on condi-
tional probabilities.

Values, attitudes, and beliefs in part determine what will be seen
as alternatives for the solution of problems. New data, physically
available to an individual but contradictory to his beliefs and attitudes,
may not even be perceived (Krech and Crutchfield, 1948, p. 190); or once
perceived, they may more readily be forgotten. Disvalued sources of
information may be forgotten when the information is still remembered.
New information has its meaning determined in large part by the existing
structures of values, attitudes, and beliefs. Its initial acceptability

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depends also on the perceived strength, goodness, and credibility of authorities who are seen as sources.

After the alternative has been selected the choice must be implemented. Whenever the means and character of the implementation are predetermined, values become important only if they are in opposition. If selection is required, values operate as described earlier to affect the choice. The influence of values on the character of implementation has been largely ignored, although implicit recognition is widespread.

E.   VALUES AS PREDICTORS OF BEHAVIOR

Much of the time, people do what they like, choosing behavior they value; much of the time, they do what is socially required, behaving according to social norms. The two kinds of behavior are sometimes identical, sometimes not. A given behavior can have positive, negative, or neutral self or social value or any combination. Accurate prediction of behavior is more probable when individual preferences and social norms converge, giving rise to the same behaviors.

As indicated elsewhere in this paper, no simple relationship exists between values and behavior. A given value may underlie many different behaviors, and a given behavior may arise from many different values. Establishing the relationship between a value and a behavior is not necessarily useful. Stopping at a stop sign, a classical example of J-curve behavior[*] (Allport, 1924), is a behavior that value theory can explain--but the explanations are likely to be multiple and competing, and therefore of little merit. Although many values may be relevant (safety, conformity, respect for law, money, convenience, etc.), forces other than values tend to be overriding. Even in this situation, however,

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[*] Some behaviors are performed by almost everyone in a society. When the frequency of certain deviations from one of these behaviors is plotted on a graph, the resultant curve resembles the letter "J."

a knowledge of values could be useful for predicting behavior: when contextual factors are not yet known, a knowledge of values allows the investigator to estimate which factors are relevant and to seek information about these only, rather than all possible factors.[*]

Further, values that seem to be widely held may not reliably indicate how people will behave, as the Kinsey, et al., studies (1948, 1953) have made clear. One's preference for studying usually leads to his studying in situations that normally elicit such behavior (attending school when school is in session), where studying is approved by peers and authorities; but a high value for studying does not predict studying when one is tired or must earn money or attend to a crisis or to other important yet rare events. Nor does it predict his studying in church or at a cocktail party.

A knowledge of values alone will not make it possible for an investigator to predict effective performance on tasks demanding skill, persistence, or considerable expenditures of energy. Under many circumstances a value for working, effective work habits, and relevant intellectual capacity must all be present to bring about effective performance. Value preferences plus requisite capacities may be predictive of effective performance.

To predict a person's behavior accurately, one must know the person's perception of what attitudes his peers and authorities will have toward the predicted behavior and also what attitudes the person will have

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[*] For example, using the stop sign behavior as a paradigm, one might wish to predict behavior at newly installed stop signs in two different countries. If the values of the drivers in Country A are high for courtesy, respect for law, respect for rights of others, and conformity, the investigator need only learn whether drivers stop at already existing signs to predict J-curve behavior. If, on the other hand, the values of the drivers of Country B are for independence, self-interest, laissez-faire, and machismo, then additional information would be needed: the history of law enforcement, attitudes toward police, knowledge of police surveillance by drivers, the location of the stop sign, etc.

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toward those peers and authorities. If he believes the behavior will
be seen as desirable and he also desires it, then such behavior should
appear more often because it will be at least twice rewarded: extrins-
ically by peers or authorities and intrinsically by task and self.
However, if the behavior is desired but peers or authorities will be
opposed to it, its appearance will depend on the subjective probability
of being caught, the expected severity of punishment, and the person's
attitude toward the peers or authorities. Punishment could consist of
shame in cultures (such as the Oriental) where interpersonal disapproval
constitutes a strong negative sanction. Punishment could also consist
of guilt, if the internalized societal values are opposed to desired
activities. Curiously, however, a number of studies, as well as clinical
experience, indicate that the strength of guilt feelings does not pre-
dict strength of resistance to temptation.[*] Guilt feelings sometimes
follow the performance of a socially disapproved act when preference for
an object or behavior, which has been strong, declines markedly upon
consummation. After a strong desire has been satisfied, the perceived
worth of the action may decline for some persons, who are then beset
by guilt--contrary to Festinger's (1957) hypothesis of post-decisional
reduction of cognitive dissonance.

Even though a person believes that the authority figures in his
world see a certain behavior as desirable he still may not act as they
prefer. For example, in some situations, behavioral norms may call for
aggressive behavior, but if aggressive acts are disvalued they are less
likely to be carried out. Peers and authority figures who are perceived
as sources of praise or blame may also be seen as causes of the good and
bad things that happen; a person is more likely to conform to the norms

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[*] These studies have shown low correlations, no relationship, or even
negative relationships between values and resistance to temptation
(e.g., Hartshorne and Hartshorne, 1929; Mills, 1958) and between guilt
and resistance to temptation, (e.g., Allinsmith, 1960; Burton, 1959;
Grinder, 1962; Maccoby, 1959; Sears, Race and Albert, 1960); no studies
have demonstrated that strength of moral values, resistance to tempta-
tion, and proneness to give projective guilt responses are covariant
(Pittel and Mendelsohn, 1966).

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of his subculture if he positively values these authorities as both
good and powerful.

F.   VALUE CHANGE

Subjective values and valued entities can be placed in rank order
of preference and intensity, but these orderings change from time to
time; moreover, the attractiveness of any entity, event, or relation also
changes over long or short periods. Reinforcement of a valued behavior
is the most effective way of increasing the attractiveness of that
behavior or the probability that that behavior will be elicited again
when appropriate cues appear.

If the environment elicits and reinforces certain behaviors, those
behaviors will appear often. If reinforcement of behavior rarely comes
until an organism has produced considerable effort to achieve the valued
condition or behavior, the organism also learns to try hard, to persevere.[*]

For many persons, the stimuli they choose or the behavior they
elect in situations of choice afterwards become more valued; those
they did not choose become less valued. This shift in values tends to
reduce the feelings of discomfort or regret (post-decisional dissonance)
occurring when the once possible alternatives are reviewed (Festinger,
1957).

Certain regular psychological phenomena make changes in value
ordering inevitable. One common process is that of satiation. When a

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[*]   Psychologist David Premack (1959) found an interesting relationship
in a hierarchy of observed values (i.e., reinforcing stimuli): a
given behavior that an organism valued ccould either reward or punish
the organism, depending upon whether the behavior led to more highly
valued or to less highly valued behavior. If a student likes chess
more than he likes to study (but likes both) and his freedom to play
chess becomes conditional upon a certain amount of study, both his
capacity for study and the attractiveness of study are likely to
increase. (This is similar to the behavior identified by the label
"functional autonomy.")

stimulus or experience or behavior occurs with great frequency and intensity it may become aversive. A simple tune which goes on and on at a merry-go-round across the street increases in its tendency to irritate us, despite the fact that we enjoyed it when we first heard it. Politicians and advertisers are sensitive to satiation problems, which they refer to as overexposure. An idea or a person that is "overexposed" may appear less pleasant or may have become somewhat aversive.

The reverse may also occur: much experience with any stimulus object or behavior may lead to habituation. That object or person becomes part of the context of our lives and largely drops out of our awareness. One example of habituation occurs when we no longer notice the temperature of 68° F water in which we are swimming even though the water initially seemed cold. The new member of the Toastmasters Club, terrified by his first speech, eventually looks forward to his Thursday luncheons with the group.

Similarly, a period of isolation from all but low level sensory stimuli (sensory deprivation) can lead adult organisms to find almost any stimulus variation desirable. A period of isolation from other persons which at first provides a pleasant sense of relaxed privacy, can become boring and even disturbing. The isolated normal adult finds that he needs other persons and that their attractiveness has increased markedly for him. A period of absence from familiar events or people can cause their value to increase.

Value orderings may change in conditions of crisis. Some theorists argue that crises do not change the strength of values, they merely render more visible or prominent those values threatened with loss or destruction.

Change in preferred behaviors may occur also if a respected and credible authority presents arguments, evidence, or even merely his

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opinion that change should occur. The authority may exert his influence
on the preference structures of individuals for belief preferences as
well as for behavior. The authority figure may be influential within
an organization because he plays a role in the legitimation of produc-
tion norms or those values associated with moral (interpersonal) behav-
iors, not merely because he monitors the distribution of information.
The change of social values, i.e., the values of a group, may follow
behavioral change* but usually must depend upon a consensually accepted
procedure for the legitimation of new values, either implicit or explicit.
Although such changes occur, the net effect is that values and beliefs
tend to be constant, and people perceive their environment to be more
constant than it really is; such constancy helps to hold social groups
together.

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* The discrepancy between public sexual norms and private behavior as
described to interviewers at the time of the first Kinsey volume (1948)
was quite large. Knowledge of actual behavior appears to reshape
behavioral norms rather than behavior itself, as a means of reducing
the norm-behavior discrepancy. However, the erratic legitimation by
commonly accepted authority figures may account for the equally erratic
changes in public sexual values.

III. METHODS USED TO STUDY VALUES

A number of research methods have been or might be used to study values. This section will describe ECHO, content analysis, surveys, interviews, projective techniques, systematic observation, and the multiple research strategy. ECHO will be compared with other methods.

A. THE ECHO METHOD

ECHO is one kind of survey used to gather and analyze information about the values of groups. It is a flexible tool that can be adapted to gather information about all aspects of the concept value discussed in the second section of this paper. The fact that ECHO queries specific roles and situations is a particular strength because of the usefulness of the information and the stability of values so delineated. Since these values rise from questions that define specific situations, they have a higher probability (than values elicited by general questions) of being relevant to the defined situations; they tend to remain stable so long as the real situation is unchanged.

When the ECHO method of investigation is employed, assumptions are made that verbal statements are related to other behaviors of individuals or groups and that (when the situation permits, legitimates, and encourages truth telling) most respondents tell the truth to the extent that they can. The unusual nature and pressure of the survey means that respondents typically lack techniques for subtle resistance to the ECHO task.[*] Thus they reveal "truth" that tends to be about problems relatively prominent or salient to them rather than those that are widely accepted and conventional or merely habitual.

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[*] Conspiracy among the respondents would render the findings useless as an estimate of values, but the fact of the conspiracy would be obvious. The pressure of making many responses causes most subjects either to answer honestly or to retreat to facetious statements or non-response. Facetious and other evasive responses are easily identified. The uncooperative subject reduces the N of the study; he rarely distorts the results.

Steps in the ECHO Method. In Step I, general, value-relevant questions are asked.

1.   "For a person like you [or in role X], what is a good thing to do? If you did such a thing who would praise you? What would be a bad thing to do? If you did such a thing, who would criticize?"

2.   "What is something good [or bad] that has happened [or could happen] to a person like you? Who or what would cause it to happen?"

3.   Particular roles or situations may be specified. e.g., "What would be a good thing to do if X were elected?" or "What would be a courageous [or cowardly] thing to do in the village?"

The amount of information ECHO supplies can be increased by asking questions about both preferred and required behavior--to find out whether there is conflict or harmony between what one likes to do and what one ought to do. Such knowledge adds to the investigator's ability to predict behavior.

The categories of either reinforcers of events (those who would praise or censure) or causes of events (those who or that which would bring about significant events) constitute hierarchies of perceived benevolent and malevolent influence in men's lives. In the ECHO method, perceived reinforcers or causes are called sources. (ECHO source questions bear a resemblance to the items of the Implicative Semantic Differential, developed by Harry Triandis [1966].)

In Step II, the value statements, usually written by the respondents on prepunched IBM cards, are classified into a set of categories by indigenous classifiers. Representatives of other subcultures, or professional classifiers, may also classify the same responses. Role-playing classification is also used, in which members of one group classify as they believe members of another group would.

Theoretically designed categories, to elicit certain kinds of
information, can be constructed in a variety of ways, such as common
inferred cause, common consequence, common goal, similar essential fea-
tures, value level, etc; teams of classifiers may employ a variety of
conceptual approaches, boundaries between concepts, or topological con-
structions. Personality features of classifiers and of groups may be
systematically related to the structure as well as to the content of
categories.

A particular subculture in contrast to another will, by putting
sets of items together in a unique way, reflect a subtle difference in
its view of reality.* When categories are well constructed, they possess
a useful degree of invariance across various transformations, reflecting
stable aspects of the internal and external environment of a group or
subculture. Indigenous classifications can be compared with professional
and/or theoretical classifications.

In Step III, computer programs are used to analyze the data and
present it for ready interpretation.

ECHO information can be enriched by combining it with information
gathered in other ways. If ECHO categories of value and influence are
treated as concepts to be rated on semantic differential forms, addi-
tional information can be obtained about relations between preferred
and required behavior; the semantic differential dimensions (orthogonal
factors) of intensity and activity can be added to descriptions of these
concepts; and descriptions of the interrelationships among values and
sources can be expanded.

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* Such a distinction was apparent in two different classifications of
the values of freshman nurses, one by freshmen, the other by senior
nurses. The two sets of categories were related to one another as
idealistic-perfectionistic is related to pragmatic-efficient. In
another investigation one group of college students produced more
differentiations among interpersonal and self-actualizing behaviors
than did the other.

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To add information, conventional closed-ended survey items can be used along with the ECHO questions. Indigenous informants can state when the interpretations of responses and categories are incorrect and can explain the prevailing consensual rationale for socially required behavior. Ratings of behavior and documentary information about ECHO populations are useful for validation. Conversely, ECHO can add information about $\underline{S}s$' perceptions of the situation in psychological or sociological laboratories, in simulations utilizing interactions between human beings and computers, or in other observational settings.

One of the main strengths of ECHO lies in the open-ended question, which prevents the investigator's premature conceptualizing of what is important. Spontaneous value statements are likely to reflect concerns of the respondents rather than expectations of the researchers. The ECHO question also makes it difficult for respondents who choose to provide answers they think the investigators would like to bias the data systematically. Other deliberate distortions are themselves revealing.

Standard procedures have been developed for data collection, analysis, interpretation, and presentation; ECHO observations made in various settings can, therefore, be compared. The system of classified responses and their associated category titles form a rich, well-differentiated basis for intercultural comparisons. Data have already been obtained from a number of populations, especially from college populations. Collection of data from illiterates is feasible though tedious. Costs of the various procedures have been brought to practical levels.

The statistical reliability of ECHO categories is quite high, especially with professional classifiers. The lower reliability inherent in indigenous classifications is an acceptable cost for the intrinsic and corrective renditions that indigens give of their own value hierarchies.

Computer-based data analysis, statistical tests, information display, and document preparation have been developed to make ECHO results

prompt, accurate, and understandable. Prior to the availability of high speed computers, the practical and adequate use of data resulting from open-ended questions like the ECHO questions would not have been feasible. Automated organization and display of information allows the ECHO report reader to participate in the analysis, critically evaluating the report in detail, and bringing to bear on the report any special information he possesses. This procedure is in contrast to the clinical mystique, in which detailed data may be either unavailable to or uninterpretable by the reader. In the ECHO report, all data and every step of the analysis and interpretation can be made explicit.

A critical assumption of the ECHO method--that there will be high incremental utility from repeating one question a number of times (7 or 10)--has received empirical support. ECHO Ss seldom give the same response to a value question more than twice or three times; the mode is one contribution per S per category.

Limits of ECHO's Ability to Predict Behavior. Like other methods, ECHO is limited in its ability to predict behavior. Some important limiting factors are listed below.

1. Values are not norms. The commonly used ECHO questions produce statements of value; norms refer to behavior under specific circumstances of role and situation. However, values can be used to predict or hypothesize behavioral norms, and vice versa.

2. Factors other than values help to determine behavior. Some examples are role, situation and other contextual factors, specific beliefs, specific motives, the individual's perception of his world, incentives, and threats.

3. Even if intended as predictions by the respondents, value statements may prove inaccurate because people

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often cannot predict what they might do or feel in circumstances they have not encountered before.

4. Persons may lie or not be aware of the values that determine their behavior. Some people are more sensitive or vulnerable to the evaluations of others; they may seek to describe more attractive sets of values and norms than they actually possess. The degree to which they do so will depend on their perception of their anonymity, and on their assumptions about the motives and expectations of the investigator as well as the demands of the situation. For these reasons, the analysis must include internal checks and cross-group comparisons.

5. Values which are not sufficiently visible or salient may not be mentioned even though they serve as criteria for preference and actions.

6. A person's values are usually part of complex cultural value systems. Knowledge that he holds certain values is not enough; the relations among them must be specified. Oppositions and contradictions among values are not unusual; individuals and groups must inescapably face choices from time to time. Even the most harmonious systems of values require selectivity in the balancing of different claims to time, energy, and other resources.

7. Specific acts or sequences of acts are usually steered by multiple and changing clusters of values.

8. Any one method of observation or inference contributes its own specific inherent error, bias, or distortion. For example, the specified or implicit role of the respondent, the situation in which the responses are given, interactions between respondents and interviewer or administrator--all could introduce distortion in a hierarchy of values that could mislead the unwary investigator.

B. CONTENT ANALYSIS

Content analysis consists of description in terms of an economical
set of categories of written or observed material and its systematic
analysis and interpretation in whole or part. Content analysis refers
mostly to verbal materials, but some non-verbal material may also be
treated. A wide variety of material has been content analyzed.[*]
Several of the studies are cross cultural. Angell and Singer, for
example, compared U.S. and Soviet periodicals directed to six comparable
elite groups upon some fifty value dimensions. Weakland's analysis is
of values expressed in Chinese communist films as compared with those
of a control group. McClelland used the Yale-developed Human Relations
Area Files to explore several values in many nonliterate cultures.

Content analysis has proved most successful (i.e., made the most
valid prediction) when predictions from it have been based on contextual
and situational information in addition to analysis of the main corpus
of material. Content analysis has points of similarity with ECHO, espe-
cially the classification of data, intended in both cases to reduce the
complexity of data without sacrificing meaning.

There are three different approaches to content analysis: quanti-
tative, inferential, and predictive.

1. Quantitative Content Analysis

In quantitative content analysis, words are counted according to
some set of rules without inferences about underlying meanings and with-
out going outside the context of the material in the documents. Lasswell
(1938) was one of the pioneers of this approach.

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[*] The list includes myths and children's stories (McClelland, 1953;
Atkinson, et al. 1958) films (Weakland, 1966); comic strips (Wolfenstein,
1954); private letters (Allport, 1960); elite periodicals (Angell, 1964;
Singer, 1964); and editorial material (North, 1965).

An early innovation in quantitative analysis of manifest content was the development by Ralph K. White (1951) of value analysis:

> Value-analysis is a form of content analysis in which a value, the unit of analysis, was defined as 'any goal or standard of judgment which in a given culture is ordinarily referred to as if it were self-evidently desirable' (White, 1951, p. 21).
>
> Value-analysis essentially is a method of categorizing what people say about what they want [which] has the advantage of reducing various and diverse materials to somewhat comparable terms. Whether these 'values' reflect sincere beliefs, or how they will be expressed in action, cannot be determined by value analysis as such, but is a matter of inference and interpretation (Eckhardt and White, 1967, p. 326).

Reliabilities reported on the technique vary from the .60's to a correlation of .93 on the ranking of 50 values analyzed in a ten-page auto-biography.[*]

While not widely used, White's form of content analysis does have adequate reliability and has produced at least some evidence of construct validity.[**] On the other hand, data scanning and analysis can be

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[*] Eckhardt has checked his own analysis-reanalysis reliability on the same material over a six-month interval, and has obtained a correlation of .80, significant at the .01 level of confidence, between two sets of frequencies on 32 values. He has also checked the reliability of subject matter in the case of Winston Churchill's speeches, whose expressed values in 1933-1938, 1938-1940, 1940-1941, and 1944 were all correlated with each other about .80, significant at the .01 level of confidence. (Eckhardt, 1965, p. 346). Eckhardt's average reliability with ten other analysts on a variety of material was .84, significant at the .01 level of confidence.

[**] White's analysis of speeches of Kennedy and Khrushchev serve to confirm Bronfenbrenner's (1961) mirror-image hypothesis of US-Soviet relations. He found that "Kennedy's and Krushchev's overtly stated values were positively and significantly correlated with each other" (Eckhardt and White, 1967, p. 331).

laborious. Evidence of the predictive validity of his approach has not
been reported.

Angell (1964) developed a scheme for comparing Soviet and American
values. A team of coders compared values expressed in three years of
periodicals addressed to six American and six Soviet elite groups, e.g.,
military, intellectual, political. (An earlier year was used to develop
the technique, train raters, etc.) His coders coded materials along
4 to 6 point dimensions of 42 value categories.

According to Angell:

> The greatest difficulty...was undoubtedly the achieve-
> ment of intercoder reliability. Our experience would indi-
> cate that it would take months of training to obtain 90 per-
> cent reliability on material such as that coded in this study.
> (p. 384)

> The problem is not in securing reliability on the value
> position within a dimension once the coders agree that that
> dimension is being discussed. However, since all degrees of
> allusiveness are found in written material, it is almost
> impossible to find a rule that will discriminate cases where
> a value position is being taken from cases where there is a
> veiled and uncertain reference to it. (p. 384-385)

The Angell exercise was worthwhile, and postdictive evidence was
accumulated of its predictive validity concerning US and Soviet behavior
toward each other. However, as indicated above, it was also a most
laborious exercise, costly in time if not in money, and has not been,
nor does it appear likely to be, widely used by policy makers although
scholars find it of interest.

Robert C. North has also developed a form of quantitative analysis
of the manifest content of verbal material. He and his team (e.g., Holsti,
1963; Zaninovich, 1962) have analyzed documents from countries in the
1914 pre-World War I crisis, as well as more contemporary materials

produced by the Soviet Union and communist China which bear upon their
relations with one another and with the United States. Using situational
base lines through a Q-sort technique initially suggested by Milburn and
developed by North (1963), positive and negative affect (values), threats,
and perceived threats were scored. However, months of training and much
hard work were required to get inter-coder reliabilities beyond .50.
Validity of the analysis in terms of behavior of the parties has proved
exceedingly high. More recently, North has used a computer-based approach
to content analysis, a modification of one developed by Stone, et. al,
(1966). This last development is expensive at this stage, but promises
to be quite useful once adequate dictionaries (one per scale) and other
modifications have been developed. The Soviet-Chinese materials also
bear close relations to behaviors and politically contextual events
within and outside of crisis.

The increased use of high speed computers will make quantitative
content analysis practical. The reduction of huge quantities of raw
data now requires more time and manpower than most investigators are
willing to expend. Computer theory and programming have advanced suffi-
ciently so that fast and reliable analysis should be feasible within a
few years.

2.   Inferential Content Analysis
A second form of content analysis goes beyond manifest content to
infer the values that are latent in the material. Thus, John Weakland
(1960) has analyzed and compared two sets of Chinese films, one produced
on the mainland and the other from Taiwan, and compared them for mani-
fest and latent themes, values, outcomes, the nature of heroes and vil-
lains, etc. The communist Chinese in particular are strongly anti-
individualist at both levels of analysis. Weakland makes his inference
on the basis of a variant of communication theory developed by him and
his colleagues (Bateson, Haley, Jackson; 1956) and upon psychodynamic
considerations. His approach is consistent with that of Wolfenstein

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(1954), who analyzed latent values and themes in the humor of children.
No attempt was made to achieve quantitative indices of reliability in
either of these studies although Weakland essentially replicated his
studies over a number of films, thus achieving a kind of reliability.
The results of these studies are highly plausible but there have been
no attempts so far to gather validational data.

3.   Predictive Content Analysis

In a third form of content analysis, used during World War II to
make various predictions, political and situational contextual factors
were employed extensively to provide bases for going beyond the manifest
content of the material being studied. After the war it was possible to
check the validity of many, though not all, of the inferences through
interviews and extensive documentation. Alexander George (1959) describes
attempts to articulate and to validate the method of making inferences
of values and behavior. Of those predictions which could be checked,
some 81 percent were correct although in some areas of prediction results
were better or worse than that. Impressive also was the capability of
the team of analysts to make correct interpretations of several month-
long series of behavior. The inferential connections were made largely
upon the basis of theoretical considerations that are primarily psycho-
dynamic.

It should be emphasized that content analysis appears to be an
effective way of exploring written material for values. While develop-
mental costs for scoring schemes and computer dictionaries or coder
training may be fairly high, costs per document gradually decrease; and
total costs may be quite low and time short compared with the costs of
doing field work. Content analysis is a particularly effective way--
and sometimes the only way--to deal with hostile information sources.
Many hypotheses not initially conceived by data collectors can sometimes
be checked through content analysis. Purely quantitative approaches to
content analysis like those of Stone et. al. (1966) typically yield high

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reliability, but the results are harder to interpret than are those which also employ context as a basis for predicting behavior.

C.   SURVEY

Surveys are quantitative studies in which standardized information about predefined populations is collected from samples that are large enough to provide bases for statistical inference. The individual is usually the unit of analysis, although the union, the corporation, the community, fraternity, or the tribe, could just as well be the unit. The data must be available in a form to allow primary manipulation by an analyst. Data may be based on face-to-face or telephone interview or mailed questionnaires. The cross-sectional survey is the basic survey design. Survey analysis may be directed toward answering descriptive, correlational, or explanatory questions.*

The survey interview is a truncated version of the interview employed naturalistically. The survey sacrifices many kinds of information for standardization of questions and for the achievement of statistically reliable scales, so that the data collected may prove comparable across persons. The survey is the most popular form of standardized data collection and analysis from representative samples.

Opinion questionnaires tend not to have their items scaled. As a result the relationships of groups of items is not known and the reponses to one question cannot readily and reliably be related to others. Frequently, the across-time or across-item reliability of items is not ascertainable, and other information is generated that is difficult to interpret. Used cross culturally, questionnaires are

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*   Famous studies based on surveys include Campbell, et al, The American Voter (1960); Stouffer, et. al., volumes 1, Adjustments During Army Life, and 2, Combat and Its Aftermath, of the American Soldier (1949-50); and the Kinsey studies (1948, 1953).

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confounded by translation, making item and situation context not com-
parable across cultures. Literal translation loses equivalence of mean-
ing; idiomatic translation is difficult. To achieve even inter-
individual comparability, most items should be closed ended. Though such
items permit easy comparisons among various cross-tabulations of data,
they reflect hypotheses that the investigator establishes before data
collection and thus may exclude information. Werner and Campbell (1959)
have listed some of these problems and have suggested solutions. Whether
closed-ended or open-ended items are used, the interpretation of survey
results frequently requires long periods of time. Lerner's (1961) cross-
cultural survey of European elites and their attitudes toward weapon
systems and related cold war matters took an additional year to interpret
after the interviews had been completed, in part because content analysis
and scaling of answers had to be accomplished before analysis and inter-
pretation were possible. Hadley Cantril (1962) met the problem in a
different way. The base lines he utilized referred only to in-country
circumstances; base lines against which the hopes and fears of the
people of different countries could be meaningfully compared were not
developed.

D.   THE INTERVIEW

An interview is an organized, purposive, direct confrontation in
which conversation is usually focused upon one person, the interviewee
or respondent. Interviews are typically structured for purpose, formality,
location, time, duration, and limits of behavior. Information is usually
shared asymmetrically: The interviewer asks and the interviewee answers
or provides information. In treatment or counseling interviews, the
interviewee tells about himself and perhaps about his problems, but he
does not expect to learn about the interviewer as he would in an ordinary
conversation. In other kinds of interviews, the purpose may be to gather
information, to provide information, or to arrive at a decision; the
purpose determines the organization, structure, and limits of the inter-
view. This section is limited to the interview used to acquire inform-
ation about values.

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The interviewer overtly or tacitly structures the interview, in-
structing the respondent about what to expect and to answer. The inter-
viewer is a primary stimulus to the respondent and an important condition
for each response. In the absence of electronic recording, the inter-
viewer is a fallible observer and inconsistent recorder of the responses.
As an interacting participant, he is part of the situation he both ob-
serves and influences. His role may be subject to change in ways that
he may not notice or understand. Most articles about the interview
(e.g., Krech and Crutchfield, 1948) point out that the mere presence of
the interviewer and the way he is perceived by the respondent (role, age,
sex, dress, attitudes, etc.) have some usually unknown effect upon the
responses. This tends to reduce reliability and validity.

The interview is an exceptionally rich source of data and hypotheses.
Cronbach and Gleser (1965), among others, point out that it can be a
basis for generating a wide range of hypotheses, none of them necessarily
reliable or valid, and that many separate bases for decisions are gener-
ated at low cost per hypothesis or prediction. The richness of the
interview as a source of data and hypotheses is due in part to its para-
linguistic qualities (Weick, 1968). The starts, stops, hesitations, rate
of speech, and tonal changes all communicate. So gestures, facial expres-
sions, bodily tension, and spatial orientation vis-a-vis the interviewer,
may serve as partially redundant, partially independent, channels of com-
munication, providing information that may be useful or misleading,
depending on the training and skill of the interviewer. In addition,
the answers and comments upon the interviewer's questions may be concise
and specific, or digressive, diffuse, vague, and avoidant.

The interviewer can learn about cognitive categories of the respon-
dent, how his ideas are organized, and the rationalizations of his posi-
tions. The interviewer can report the context of the interview in
general (e.g., the setting, time of day) or for particular statements
(e.g., tone of voice, contiguous events). Such indications of micro-
context can improve interpretations and inferences.

Interviews may be divided into two kinds, self-report and informant. In the former, the respondent answers questions about himself, his own behavior, attitudes, or feelings; in the latter he discusses groups or other individuals in various situations, describing their behavior, attitudes, or feelings. Anthropologists (Albert, 1958) typically utilize informants, particularly when values are seen as norms of conduct or as moral or social obligations, whereas sociologists typically seek information about the respondent himself. Thus the sociologist utilizing the self-report interview more often collects data about preferences, expectations, perceptions, or attitudes than about norms. Informant interviews often are presumed to have more reliability because the data are less variable than self-report data across time or within a culture. No validity studies of informant interviews were found except for the data quality control techniques suggested for anthropologists by Naroll (1962).

Sociologists commonly employ the self-report interview, which normally is highly structured; the information sought is limited, which increases reliability and comparability, but sharply curtails the variety of data and hypotheses. These characteristics are discussed in the section on surveys.

E. PROJECTIVE TECHNIQUES

The typical projective test presents an ambiguous stimulus which requires behavior, usually verbal, that presumably stems from the psychodynamics of the respondent. The responses (words, sentences, stories, drawings, or action) are analyzed, usually within a theoretical structure, following specific decision rules (e.g., the presence or omission of attention to detail or structure). The interpretation usually requires considerable time of a highly trained clinician. A few individuals can give convincing demonstrations of uncanny psychological insight using these techniques.

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The assumption that responses to projective tests mirror actual
behaviors and actual emotional responses seems often to be taken as
proven by projective test users. The few attempts to validate projective
tests indices, signs, and indicators in behavioral terms on Rorschach,
Sentence Completion, or Thematic Apperception Test (TAT) have mostly
been unsuccessful. Very little emphasis has been placed on predictive
validity. "The adequacy of these measures has been judged by their
effectiveness in yielding results consistent with psychoanalytic and
learning theory models of personality development and by their face
validity" (Pittel and Mendelsohn, 1966, p. 33).

Projective techniques can be useful in inferring what is not mani-
fest in content or structure. Martha Wolfenstein (1954) treats humor
as if it represented projective output, somewhat as McClelland (1953)
used myths from around the world.

Projective techniques are employed by those who regard indirect
measurement as the best and most accurate measurement of values and
motives. If a man does not realize what he is telling, he will inadver-
tently reveal more, it is thought. Such methods are also used by skeptics
who, although believing them to be unreliable and of low validity, find
them rich sources of hypotheses.

A major disadvantage of projective techniques in their full-length
format is that administration, scoring and interpretation are each time-
consuming and costly. In their group forms (they may be given as multiple
choice questionnaires) they are changed and truncated.

Lindzey (1961) in discussing the cross-cultural replicability of
projective tests states:

> Very little is known of the extent to which person-
> ality inferences reported by one investigator... can be
> reproduced by another investigator if he is given the
> opportunity to observe the same subjects or even the same
> raw data.

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As with content analysis and the interview, knowledge of the con-
text in which communications are elicited yields more interpretable
results:

> The importance of 'blind' analysis of projective tech-
> niques is easily overestimated... One cannot expect such
> instruments to function even close to their normal level of
> effectiveness when the interpretations are made with little
> or no contextual information concerning the subject, the test-
> ing situation, and the culture. In spite of this, it is
> somewhat surprising...[that not one study has considered]
> random factors and bias in the comparison of [blind] projec-
> tive-technique inferences with inferences derived from tradi-
> tional data sources.... A striking and very surprising short-
> coming that characterizes most of the studies we have dis-
> cussed is a failure to provide a full description of the
> circumstances under which the test is administered. One
> might expect that the anthropologist, with his traditional
> focus upon external constraint and social determinism, would
> show an unusual sensitivity to the role of situational and
> cultural influences on response to projective techniques.
> Not only do the anthropologists fail to give full consider-
> ation to these factors, but most of those studies where the
> testing situation is described relatively satisfactorily have
> actually been conducted by psychologists, or else they have
> involved a psychologist as a collaborator. Presumably the
> resolution to this paradox lies not in the psychologist's
> appreciation for the general importance of cultural-situational
> factors, but rather in the anthropologist's lack of appre-
> ciation for the extreme importance of immediate or situ-
> ational factors in determining projective technique response.
> The anthropologist often appears to have accepted the projec-
> tive technique as a relatively immutable device that can be
> administered in a standard manner and scored in an objective
> fashion, with the consequence of specifiable results quite
> independent of variation in the surrounding world. As our
> discussion has already made clear, this is by no means the
> case; a sensitive and dependable outcome from projective-
> technique data depends upon a full understanding of the con-
> text within which the test was administered (Lindzey, 1961,
> pp. 297-298).

F.   SYSTEMATIC OBSERVATION

Observation is the foundation of empirical science: The subject
matter, the methodology, and the purpose of the observations distinguish

the various disciplines. Observing behavior in different settings is
one way to discover values. Systematic observation is the principal
tool of the anthropologist working as a participant observer who shares
native customs and who may have gone partially native. Sociologist
Howard Becker (1958) has argued very strongly for careful observation
in field settings, but he emphasizes the phenomenological method for
understanding the roots of behavior. The psychologist who systematically
observes behavior, typically observes only those behaviors that he has
previously chosen to observe, thus increasing the likelihood of missing
events known to be significant and also decreasing the likelihood of
making unexpected and useful discoveries.

Values, then, are inferred from observations, particularly obser-
vations of behavior displayed in making choices. Just as interviewers
may draw incorrect inferences because respondents lie to them and mis-
lead them, so can observers be mistaken, since a single set of observed
behaviors are essentially ambiguous about the motivation that produced
them.

Behavior may be predicted from a knowledge of values and then
observed, but unless we are told a man's values (and he is both honest
and insightful) we cannot know them directly.

G.   THE MULTIPLE RESEARCH STRATEGY

A combination of methods can assist in the study of values. When
several value dimensions and measures that partially overlap are used,
each aspect of value is measured more than once. This combination, in
addition to increasing the amount of information (the more dimensions,
the more information), increases confidence in the reliability of the
measures. The same combination of measures used to check the validity
of the concepts and to provide empirical support for the hypotheses can
also supply less ambiguous and more solid bases for interpretation of
findings.

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There is a second gain in using multiple research strategy:
Through a multi-method, multi-trait matrix, as described by Campbell and
Fiske (1964) in their convergent and discriminant approach to validity,
it is possible to discern which methods yield the most and which methods
yield the least method-effect (as contrasted with substantive-effect) at
different points in the two sequential research strategies of inquiry
and verification. The investigator is thus able to be more objective
and to make consistent predictions (reliability) with greater accuracy
(validity) and utility.

Among the tools which might be used in a multiple research project
investigating values are those instruments designed to assess individually
held values. Although projective tests can be used for this purpose, the
focus is much broader. Two well-known and respected instruments have
been used to study individual values: the Allport-Vernon-Lindzey (1960)
Study of Values test (A-V-L) and the Strong Vocational Interest Blank
(SVIB) (Strong 1943). Both have adequate stability; the SVIB has had
remarkable success demonstrating the usefulness of values (restricted
here to preferences) as determiners of future behavior when the results
have been used to predict job satisfaction and academic success; the
A-V-L has been used as a criterion measure and the results, though mixed,
have indicated that broad value groupings (e.g., economic, theoretical)
are related to specific behaviors. Both tests must be restricted to
the populations on which they have been standardized; neither instrument
has been usefully applied to determine group values, though either could
be.

IV. SELECTED CRITERIA FOR COMPARING METHODS OF VALUE STUDY

The criteria used to compare approaches to the study of values are reliability, validity, and utility. The factors that are critical for effective design of a study (sampling, experimental or quasi-experimental design, levels of significance, etc.) are omitted because they are common to all approaches.

A. RELIABILITY

Reliability may be defined as the consistency with which an instrument measures whatever it is measuring. The reliability of a behavioral measure or set of observations is a sine qua non for other forms of merit. Reliability is measured by a proportion which describes the consistency or agreement of two highly similar measures, or of two (or more) observers at the same instant, or one observer on two (or more) occasions. The common coefficients of reliability can vary from plus one (complete agreement) through zero to minus one (complete disagreement). If the reliability of an instrument or observer does not differ significantly from zero, its agreement with a behavior criterion (validity) can prove no higher. If the interobserver reliability is one, then knowing the observations of one member of a pair of observers permits perfect prediction of the observations of the other. The reliability of psychological instruments or observations is usually estimated by measuring internal consistency (split-half or item-statistic estimates) or consistency over time or trials (test-retest or equivalent-form estimates). In systematic, objective observation or in processes of content analysis a coder must be compared with himself at two points in time or against two comparable samples of behavior or material. Several (and at least two) observers or coders are customarily employed and their independent judgments are compared. If observers both categorize (assign to a category or dimension) and assign to location on a scale or dimension, separate reliability coefficients for the two operations are computed.

High reliability, while a logical prerequisite and limit of validity, does not state what behavior will be predicted by such a measure. A measure

with high reliability may accrue various validity coefficients, some
fairly high, some not significantly different from zero. It is obvious
that no measure could predict all behavior equally well. A reliability
coefficient does not in itself give any hint of the nature of behavioral
criterion measures to be predicted, nor does it give any indication of
whether the measure under consideration might be said to have utility
or a favorable ratio of benefits to costs.

Replicability is one kind of reliability. If an experiment, simu-
lation, or other set of observations is repeated and the outcomes essen-
tially agree with the original, the phenomenon or procedure is described
as being reliable or replicable. Some psychological phenomena have been
replicated with very high reliability, e.g., the remarkable systematic
behavior produced by one or another schedule of reinforcement. Others,
such as the para-psychological phenomena, appear to be almost impossible
to replicate. Still other phenomena, such as those of repression, may
occur regularly in day-to-day behavior or in clinical settings, but have
not been produced in controlled form (without confounding artifacts) in
the psychological laboratory.

It is not difficult to measure the reliability of observations or
judgments of values. Obtaining adequately high reliabilities is some-
times difficult.

B.   VALIDITY

Validity may be defined as the degree to which an instrument mea-
sures what it is expected to measure. While reliability concerns the
extent of similarity between two highly similar sets of observations or
measures of the same groups, process or entities, <u>validity</u>[*] concerns

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[*] Some writers (e.g., Campbell and Stanley, 1963) use the terms <u>internal</u>
and <u>external validity</u> to refer respectively to the power of an experi-
mental design and the generalizability of the findings. Those meanings
are not intended here, although <u>external validity</u> and <u>construct validity</u>
are related.

relations between two different processes or entities, e.g., a group's ratings of truth as a value and ratings of their behavior as truthful. The same coefficients* which are computed for reliability are also computed for validity and vary from zero to plus or minus one. Validity coefficients indicate a degree of relation between two different measures, usually a predictor and a criterion. A set of observations may serve several different uses or purposes; each use requires a separate criterion measure and validity coefficient. While the reliability coefficient (r_{11}) is an indicator of consistency of observation, judgement or measurement, the validity coefficient (r_{12}) is an indicator of the extent of agreement between a set of observations of verbal (or non-verbal) behavior and some different verbal or non-verbal behavior that it is expected to predict or measure.

Several validity terms may be associated with a set of observations.

1. Face Validity

Face validity means that a measure appears to be appropriate, that it should measure what it purports to measure; no demonstration is needed.

2. Intrinsic Validity

Intrinsic validity exists when the predictor is also the criterion, e.g., an algebra test given at the end of a class in algebra may have intrinsic validity.

3. Concurrent Validity

The concurrent validity of a set of observations is its correlation with another set of observations. The concurrent validity of a verbal ethnocentrism scale could be estimated by correlating the scores with judgments or ratings of actual discriminatory behavior toward ethnic groups.

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* In many studies, the experimenter is not attempting to determine the extent of the relationship, but rather that a particular relationship is not a chance result. In these studies, more sophisticated designs and more powerful statistics can be used.

4.   Predictive Validity

Predictive validity typically is harder to achieve than concurrent validity because it concerns the degree of association between observations now and behavior later on. An example might be relations between value preferences expressed now and job performance or job satisfaction at later points in time. For some jobs, validity coefficients between value (or interest) preferences now and outcomes later may be fairly high; whereas for jobs where capacity or talent outweighs value preferences, the latter predict less well. The distinction between concurrent and predictive validity is not always clear. Predictive validity refers always to the relationship between two sets of measurements, both designed to estimate criteria. Validity coefficients ideally would be computed between a predictor and an ultimate criterion, e.g., something a practical man really wants to predict; but often researchers settle for second or third best proximate criteria.[*]

In the laboratory, hypotheses are tested and measurements validated by the prediction and subsequent observation of cause-and-effect relationships that are under the experimenter's control. This kind of rigorous testing cannot be achieved when survey methods are used under field conditions; however, quasi-experimental designs have been developed (Campbell & Stanley, 1966) and can be used to eliminate rival hypotheses and establish the validity of measurements.

5.   Construct Validity

Construct validity refers to the explanatory power of a concept, the degree to which it is unambiguously related to other concepts.

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[*] They might, for example, have to settle for a salesman's grades in a sales training course as a criterion, when it is not possible to use as an ultimate criterion his success in the field. There might, however, be little correlation between the two criteria. Contribution of a new tactical missile to the winning of battles may be the ultimate criterion needed in operations research designed to evaluate the missile, but the investigator might settle for more easily obtained measures of merit such as the Circular Error of Probability.

We have just seen that viewed empirically, a useful concept is related to the operations (observations or measurements) that define it; this relationship facilitates predictions, which can be confirmed or disconfirmed. Viewed theoretically, a concept becomes more useful as it is related to other theoretically significant and fruitful concepts; this relationship multiplies the explanatory power of the concept and increases confidence in its meaning and generality. Such conceptual interrelatedness helps to organize as well as to explain data. When a concept (construct) has a pivotal role in a theoretical framework, and when predictions generated by that concept or by its surrounding framework tend to be empirically confirmed, the concept is said to have construct validity.

Different measures of values have different levels of validity. But values recently have been shown to predict not only voting behavior, classroom grades, delinquency, vocational choice, satisfaction, and success, but also more specific attitudes toward particular social objects and situations, including something as complex as behavior rated as creative, and even leadership style. The construct validity of the measures of value has not yet been clearly established, but the number of hypotheses generated which employ the concept, together with the philosophic centrality of the concept, leads us to believe that value estimates will prove to have considerable construct validity.

C.   UTILITY AND INFORMATIONAL UTILITY

1.   Utility

The term utility, when applied to a scientific concept or a set of observations, refers to perceived usefulness, whether direct or derived, absolute or comparative. Economists use the term to refer to perceived desirability and imply (but do not state) that negative qualities have been taken into account. Here we intend the meaning to be explicit: utility refers to both benefits and costs, which we call

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the benefit/costs ratio (without suggesting a simple mathematical oper-
ation). The utility of an information-gathering technique is a function
of the relevance of the obtained information to a problem and the costs
(e.g., manpower, time, and money) of obtaining the information. For any
given problem, the information might be pertinent to the solution, might
be irrelevant to the solution, or might be misleading in which case
utility is negative.

A technique for gathering information about the organization of
the values of an individual may be expensive when it takes much time of
an expert plus the time of a subject. A projective test such as the
Rorschach takes one or two hours to administer and up to seven or eight
additional hours to score, interpret, and report--all per single client.
The reliability of Rorschach signs and interpretations and the validity
of hypotheses produced from the Rorschach are typically quite low. The
test is still widely used because it is believed to have much utility
in clinical settings: it permits the inference of latent psychodynamics,
the organization of the perceptual-conceptual defenses, coping mechanisms,
and values.

Cronbach and Gleser (1965) have argued persuasively that techniques
such as the Rorschach or open-ended interview and questionnaire can pro-
duce many working hypotheses, not readily obtainable in other ways.
The techniques may have high utility despite their often low reliability
and validity since the cost per hypothesis is low. Cronbach and Gleser
contrast these multi-indicator techniques with scales measuring only one
concept such as responsibility, attitude toward religion, or intelligence.
These latter scales must have high reliability and validity or their
utility may tend toward zero under some circumstances.

2.   Informational Utility

Information theory suggests that unexpected information has more
utility than expected information, which merely serves to increase the

credibility of a source; a technique or theory that produces more un-
expected information has more information utility than a technique that
produces less. Unexpected information that is relevant to important
problems, or to problems that can be handled, has high utility.

Informational utility is different from and partially independent
of validity. An instrument may state with great accuracy what it is
supposed to state, but the information may already be known; on the other
hand, a technique, such as the interview, which tends to be low on relia-
bility and validity may provide information which is unexpected and which
the user could have discovered in no other way. Even if such information
must for the moment be considered tentative (until validated by other
approaches), it may be invaluable. If a theory or a concept suggests
interesting questions for research, questions which otherwise would not
have been raised, this concept or theory has heuristic worth, i.e.,
informational utility.

In general, multi-indicator techniques (which Cronbach and Gleser
call wide bandwidth techniques) may be expected to have greater inform-
ational utility than a univariate technique. Multi-response, open-ended,
or partially structured techniques should have more informational utility
than convergent, or highly structured ones.

Now that a number of methods for the study of values have been
discussed, and criteria for evaluating them have been explained, it is
possible to proceed to an explicit evaluation of the methods to see the
strengths and weaknesses of each in terms of the criteria.

V.   EVALUATION OF ECHO AND COMPARISON WITH OTHER METHODS

The six methods discussed earlier will be compared under each of
the three criteria; multi-research strategy will not be included since
by definition any combination of investigative strategies might be used,
and the relationships to the criteria would differ for each one.   Intel-
ligent use of multi-research strategy will usually increase reliability
and validity, but utility and informational utility must be estimated
for each project. One reason that multi-research strategy, which clearly
is a powerful investigative tool, is not regularly used is that the costs
may be greatly increased and the utility thereby reduced. Another reason
is that investigators tend to use the methods with which they are familiar;
thus a survey organization will tend to define all problems so that sur-
vey research is the only appropriate investigative tool.

A.   RELIABILITY

1.   The ECHO Method

Satisfactory coefficients of reliability for group data collection
have been obtained on test-retest measures; when responses were collected
from the same $\underline{S}$s on two occasions and classified together, conservative
reliability estimates were between .71 and .84. These estimates reflect
the consistency with which a group of $\underline{S}$s is represented in the same set
of categories on two occasions.

The reliability of classification has been variable. Re-sorting of
data cards into existing categories yields r's of .90 and above. Re-
classifications into new category arrays have been judged as highly equiv-
alent, but the discrepancy between the numbers of categories used for the
different classifications has occasionally been so great that the legiti-
macy of an estimate of correlation is open to question.

Classifiers can usually agree that a given response card belongs
in a particular category; the reliability problem arises with the free
determination of the number and kind of categories. A team focusing on

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abstractions is likely to develop categories that are different from those of a team focusing on concrete variables; the distribution of items by a team using a large number of categories is necessarily different from that of a team using a small number of categories. A reliability coefficient determined under these conditions is ambiguous; in various investigations whenever judgments were made of the semantic comparability of categories, the reliability was high--but a coefficient determined by subjective manipulation does not carry the weight of one determined by mechanical manipulation. (Classification reliability can be deliberately increased by conferences between the two classification teams.)

In general then, the ECHO method yields reliable results, whether one evaluates the consistency of the respondents or of the classifiers; but under some conditions the reliability of a classification cannot be unambiguously determined.

2. Content Analysis
Well-trained analysts, working with pre-determined common categories, can produce adequately reliable data. An "unstructured" classification, such as ECHO uses, is normally not used in content analysis; if it were, the reliability would undoubtedly be very low. Naive indigenous classifiers, working with ECHO data, provide reliability coefficients of .90 and up when classifying data into existing categories; only highly trained content analyzers can approximate the same level.

3. Survey
Under good conditions survey data can be highly reliable. However, many pitfalls exist, some of them not known, which require careful design and continuous monitoring. Adequate reliability can never be assumed. The data collected in surveys vary from quite objective (age, sex, height, etc.) to completely subjective (opinions, attitudes, etc.). Reliability

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tends to drop as the data become more subjective. Since the phrasing
of the questions can have great impact on the answers, reliability across
surveys is difficult to assess. (ECHO questions, though variable, are
much more stable than survey questions.)

The reduction and analysis of survey data obtained in quantitative
form is highly reliable. The more open-ended the questions, the less
reliable the analysis.

4. Interview[*]

Studies of the interview indicate very low reliability for data
collection and interpretation. Data reduction and analysis can be reli-
able if relatively simple categories are predetermined and the raters
are well-trained. If the interviews are extensive, content analysis
can be used, achieving the same kind of data reduction reliability des-
cribed in that section.

5. Projective Techniques

For both data collection and data analysis, inter-investigator
reliability is generally low, but acceptable levels are possible with
very skilled and uniformly trained analysts. In addition, intra-subject
reliability is also low, probably because projective tests are parti-
cularly sensitive to transitory fluctuations in mood and set of the
respondents.[**] Evidence for inter-group reliability is non-existent.

6. Systematic Observation

The concept of reliability is meaningless for systematic observa-
tion as a general procedure because of the many variations in procedure
and conditions. This much, however, can be inferred from a knowledge

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[*] The interview used to collect survey data will be discussed in the
section on surveys.

[**] True also for ECHO, but ECHO is designed for group analysis and the
responses for a given group have high reliability from one occasion
to another.

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of psychology: data collected by observation tends to be quite unreli-
able, unless well-trained observers are agreed on exactly what is to
be observed and the probable psychological distorting mechanisms are
known and controlled. Thus, two job analysts can produce reliable infor-
mation about relatively simple jobs in which they are not emotionally
involved; but, it is unlikely that two social scientists conducting
phenomenological investigations of a culture would present the same find-
ings, other than about the most compelling phenomena, and even these
could be grossly different. A team of scientists, working together,
could agree about their findings, and the appearance of high reliability
could be achieved. However, if the scientists undergo careful training
and are agreed in advance about what to look for and how to interpret
what they find, then adequate reliability can really be achieved.

B. VALIDITY

1. The ECHO Method

Although not enough validity estimates have been attempted to allow
a confident statement about validity, the high reliability of the method
means that high validity is at least possible. Two estimates of con-
current validity show excellent promise. Studies of predictive and
construct validity are in process; preliminary findings are satisfactory.

2. Content Analysis

A few studies have shown acceptable concurrent validity. No infor-
mation is available for predictive or construct validity. Since the
evidence for reliability is unclear, no prediction of validity can be
made.

3. Survey

The high validity coefficients found for survey data really validate
the sampling procedures, since many surveys (e.g., voting behavior), are
designed to estimate the quantity of some variable in a population, when
the situation makes the total population unavailable because of cost or
some other factor.

Other predictions, such as consumer or political preferences, have shown remarkable variation in validity, e.g., the marketing of the Edsel as contrasted with the Mustang, or the J.F. Kennedy presidential primary campaign in West Virginia as contrasted with the R. M. Nixon gubernatorial campaign in California. All of these were based on surveys. Although it is possible that judgment was the controlling factor, it is more likely that the specific questions asked yielded in one case useful, in the other misleading, information.

4. Interview

Low reliabilities mean that overall high validities are not possible. Specific cases may show high validity, but the prediction of which ones are valid is based solely on faith.

5. Projective Techniques

Projective techniques should be considered to have unknown validity. They are primarily useful for the generation of hypotheses; validity under these conditions is almost irrelevant since the criterion measure would be the veridicality of the hypothesis. Those studies that have used projective techniques to assay groups have not presented evidence of validity.

6. Systematic Observation

The concept of validity is appropriate only for each particular case or kind of observation. Reliability, described as mixed, determines the upper limits of validity; in addition, the factors described in the section on reliability apply independently to validity criteria. Observation, used to estimate values, is particularly susceptible to psychological variables. If observation continues for a long period of time, the observer is increasingly prone to become involved and non-objective, and validity will be reduced. When observation, per se, has been measured for validity, the resulting coefficients have been low for everything except simple counting or identification.

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C.   UTILITY AND INFORMATIONAL UTILITY

1.   The ECHO Method

Utility is probably high. The cost of data collection is low
whenever groups are available but is considerably higher when the target
population must be surveyed as individuals. The cost of data analysis
is low and the potential benefits are high. The larger the population
to be predicted the greater the potential utility, since samples can
remain relatively small.

Informational utility can be high. Large scale and pilot studies
show that usable unexpected information is developed.

2.   Content Analysis

At the present time, utility is low. Data collection costs are
frequently low, but cost of analysis is high. Under conditions when
content analysis is the only method possible, the concept of utility
may be meaningless. The development of computer analysis will increase
the utility.

Informational utility is moderate. The analyst must work with a
limited array of uniform concepts and the probability of getting un-
expected information is low. However, usable information could be
elicited with the proper design.

3.   Survey

For certain questions, utility is high; for other questions it is
very low. Since the survey can give misleading information, a poorly
done or inappropriate survey can lead to results that are worse than
chance. Utility, under these conditions, would be negative.

Informational utility is low for unexpected information since
surveys normally are designed to yield only expected results, but it
should be high for usable information, for the same reason.

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4.   Interview

Utility is probably low. The cost can be high and the benefits, as with systematic observations, are not known.

Informational utility is not determinable but is probably high, unless the interview is completely structured. The interview is potentially the richest source of unexpected information.

5.   Projective Techniques

Utility is low. The cost of data collection and analysis is normally high and the benefits are unknown.

Informational utility is not determinable but probably is high. Unexpected and potentially usable information may be generated but only in the form of hypotheses to be tested.

6.   Systematic Observation

Utility is variable. The cost can vary from low to high and the benefits, because of the unknown reliability, cannot be estimated until after decisions are made.

Informational utility can be very high. Paradoxically, the more systematic the observation, the more likely that informational utility will be low. If observation is restricted to predetermined categories, the observer is restricted. However, a skilled observer can be both systematic and open.

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APPENDIX

SOME HYPOTHESES ABOUT VALUES

PREMISE: Values are arranged hierarchically for individuals or groups.

1.   Hypothesis: Higher ranking values will outweigh lower ones when
                   choices involved are relevant to both.

2.   Hypothesis: The ordering of values will predict attitudes if $\underline{S}$s
                   are aware of fact and value consistency. Value-
                   attitude discrepancies will be resolved in favor
                   of values.

3.   Hypothesis: Changes in the skills, talents or capacities of a
                   group will be the best single predictor of changes
                   in value orderings.

4.   Hypothesis: Changes in the incentive structure within an organi-
                   zation will be the next most effective predictor of
                   changed value orderings.

5.   Hypothesis: Women who are comfortable in roles subordinate to
                   men and who perform well there will have different
                   value orderings, but not necessarily different
                   values, than women without such tendencies or
                   inclinations.

6.   Hypothesis: Values are cognitive and are influenced by affect.
                   If the cognitive content of a value remains constant
                   while affective investment goes up (one feels more
                   emotionally committed to a value) that value will
                   rise in the value hierarchy.

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7. Hypothesis: Values seen as essential (necessary to the preservation of a culture or person) will be higher in a value hierarchy than values regarded as less essential.

8. Hypothesis: Values which are regarded as important, but not essential, to the preservation of a group or person will tend to stand high in rank though less high than ones seen as essential.

9. Hypothesis: In general, instrumental values (good to do) which are high in a value hierarchy (rated highest on semantic differential potency, activity, and evaluation factors, for example) will follow the classic "J" curve (Allport, 1923) of behavior distribution, and these values will show the J-curve effect far more than will values rated lower on value hierarchy.

10. Hypothesis: Values higher in the value hierarchy of an individual or group will resist change more than will values lower in the hierarchy.

11. Hypothesis: Values high in a value hierarchy can be employed more effectively to change values lower in the value hierarchy than conversely.

12. Hypothesis: If two groups have similar values, differently ordered, the groups will tend to be incompatible.

13. Hypothesis: Events representing terminal (good to happen) values that are high on the value hierarchy will reinforce those behaviors perceived as necessary for their occurrences.

14. Hypothesis: Good to happen (ECHO) or consummatory (Rokeach) values
that are unrealized will motivate behavior strongly
even when relatively low in the value hierarchy.

PREMISE: Although values tend to have either a prescriptive quality
(ought to do) or a desired quality (like to do), the two
qualities are strongly related.

15. Hypothesis: When behavior is perceived as causing conflict between
prescriptions (what one ought to do) and preferences
(what one would like to do) the frequency of such
behavior will decrease.

16. Hypothesis: Prescriptions and preferences will tend to be in
harmony. Value prescriptions will tend to predict
what people like to do (i.e., ought will predict
prefer) and vice versa.

17. Hypothesis: Agreement between preferred and prescribed behavior
will considerably increase the probability that such
behavior will occur.

18. Hypothesis: The "J" curve of conformity will be sharper when
group values support institutional norms, e.g., being
on time to work (institutional) when workers place
high value on their jobs.

PREMISE: Values are more general than attitudes.

19. Hypothesis: Values will show wider predictive applicability than
attitudes.

20. Hypothesis: Semantic differential activity (factor III of Osgood's
semantic differential) will correlate with saliency

of value, whereas potency and evaluation correlate
with ranked importance.

PREMISE: Hierarchical value orderings can be used to determine various
          behaviors among groups.

21. Hypothesis: Adult socialization (the learning and internalizing
                  of new adult roles) typically will involve both shifts
                  in the rank ordering of some values and the appearance
                  or disappearance of others.

22. Hypothesis: Given the capacities or abilities of a group or orga-
                  nization, values and value orderings will predict
                  preferences for persons (friendships), activities,
                  and effectiveness.

23. Hypothesis: The perception of dominant family dyads will corre-
                  late with value orderings more closely than with the
                  presence or absence of values.

24. Hypothesis: Value categories that appear uniquely for a group
                  whose value ordering otherwise resembles those of
                  other groups, will prove particularly useful, i.e.,
                  possess high informational utility, for predicting
                  behaviors of the groups. (An example of this may
                  be the unique categories appearing in the Howard
                  University data, i.e., Good to do "Have pride of
                  Race;" bad to do "deny race." While these items
                  did not predict the fact of conflict with the
                  University administration [ECHO was administered
                  over six weeks before the sit-in] they clearly
                  reflected the issues.)

25. Hypothesis: Differences in value ordering between parents and their children will predict intergenerational conflict.

26. Hypothesis: Most people value the approval of others, but the rank of this value will vary considerably both within and between groups.

27. Hypothesis: Groups that do well with one another, and like one another in spite of heterogeneous values will tend to be particularly adaptable and creative.

28. Hypothesis: Similarities of value orderings will predict compatibility between groups more accurately than will similarities of content of beliefs.

29. Hypothesis: Value orderings will differentiate creative from conforming and non-creative groups.

30. Hypothesis: Two groups with different value orderings will tend to find communication difficult.

31. Hypothesis: Values predict morale: if two groups have similar value hierarchies, but the members of one group have more homogeneous value orderings, the more homogeneous group will show higher morale.

32. Hypothesis: Shared value orderings will play a larger role in predicting friendship or compatibility than will values themselves.

33. Hypothesis: Chinese, Japanese, and Soviet value orderings will be more similar to one another than to US or British value orderings (e.g., respect, authority, history, individualism).

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PREMISE: Credibility of messages is in part a function of the perceived power of the sender.

34. Hypothesis: Messages from powerful sources of praise and good events should appear credible across a distribution of messages.

35. Hypothesis: Messages from powerful sources of praise and censure and of good and bad events will appear even more credible across a distribution of messages.

PREMISE: Values affect and are affected by crisis and stress situations.

36. Hypothesis: Crises will temporarily increase the visibility of certain values, thereby increasing their hierarchical levels.

37. Hypothesis: Long-term or particularly intense crises will tend to change value orderings permanently.

38. Hypothesis: Threats to particular values serve to heighten the saliency of those values.

39. Hypothesis: Values influence crisis decisions but do so most effectively when information is ambiguous or inadequate.

40. Hypothesis: In the limiting situation of no information, values alone may serve to suggest reactions to ambiguous stress.

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13. ABSTRACT

Values are subjective estimates of the worth or desirability of any entity or event, whether concrete or abstract. Explanation and prediction of human behavior can be improved by including value statements among the observed behaviors.

ECHO is a new method of studying values; it differs from most other methods by allowing the respondent great latitude of statement, by relating stated values to stated causes or social influences, and by eliciting multiple statements. Though its antecedents go back seventy-five years, only with the advent of computerized data analysis has the collection of such heterogeneous and complex behavioral data become generally useful. The information provided by ECHO complements the information provided by polls or surveys that use more specific and, usually, more numerous questions.

The concept value and related concepts are defined; the analysis of values and their place in behavioral research is treated. ECHO and five other methods of value study are described and then compared against the criteria of reliability, validity, and utility. Forty testable hypotheses are listed for future exploration of the concept value. Sixty-five references are listed.

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